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EXAMINER
LINNENKAMP, NICHOLAS L

ART UNIT	PAPER NUMBER
2635	3

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/870,188

Applicant(s)

KITSON ET AL.

Examiner

Nicholas L Linnenkamp

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 February 2003.
- 2a) ☐ This action is **FINAL**.
- 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 May 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) ✓
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 1,2.

- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 505 and 507. On pages 13 and 14 of the specification applicant refers to items 506-508 which includes 507 and to items 504-508 which includes both 505 and 507 of which neither 505 nor 507 are referenced in the drawings. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

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The abstract of the disclosure is objected to because abstract uses the word 'invention'. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 34 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 34, applicant indicates that baseline samples should be collected while the person goes about his or her **normal activities**. It is unclear as to what the applicant regards as "normal activities". A person's normal activities could be attempting to authenticate themselves.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

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only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-5, 7-13, and 18-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Borza et al. (heretofore Borza, WO 98/12670).

In reference to claim 1, Borza teaches of an apparatus for authenticating the identify of a person, comprising;

- A wrist-worn display (**Fig 5b, 150**) for providing information (**the watch tells time**) to a wearer of the apparatus
- An image sensor (**53 for biometric sensor**) for obtaining an image of the wearer when the wearer views the display
- A memory for storing a baseline profile of the wearer (**Fig 10, "Authorized User Information", Page 16-17, lines 29-31 and lines 1-9 respectively**), the baseline profile being based upon the image wherein the image sensor repeatedly obtains additional images for comparison to the baseline profile (**Additional images can be obtained whenever sensor is actuated, Page 6, lines 10-15**).

In reference to claim 2, claim 1 is taught as above. Borza teaches that the apparatus develops a response when comparison of the additional images to the baseline profile indicates that identity of the wearer cannot be confirmed (**Invalid registration signal is transmitted when the identification cannot be verified, Page 16, lines 12-22**).

In reference to claim 3, claim 2 is taught as above. Borza teaches that the response disallows a transaction attempted by the wearer (In **“access mode” access to the host system is either authorized or not authorized, Page 15, lines 20-25**).

In reference to claim 4, claim 3 is taught as above. Borza teaches that a general-purpose processor is used for making the comparison of the additional images to the baseline profile (**Fig 6, Processor 12**).

In reference to claim 5, claim 3 is taught as above. Borza teaches that a transceiver is used for transmitting the additional images to an external computer system (**Page 12, lines 10-17 show port 55 can alternately comprise a transceiver**).

In reference to claim 7, claim 5 is taught as above. Borza teaches that the external computer system performs an image recognition technique on the additional images (**Fig 7 shows external computer system with Comparison 23**).

In reference to claim 8, Borza teaches of a method for authenticating the identity of a person comprising:

- Obtaining baseline samples of biometric data from the person (**Fig 10, “Read Biometric Information”**)
- Forming a baseline profile from the biometric data (**Fig 8, “Enroll mode” stores profile information for comparison in access mode**)
- Repeatedly obtaining additional biometric data from the person in response to the person accessing a portable device for information (**Sensing mechanism is repeatable and Retinal Scan described on Page 11, lines 18-22 can occur when user is either obtaining the time from looking at the watch**)

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or performing something as simple as trying to obtain information on whether he/she is being authorized by the device)

- Comparing the additional data to the baseline profile for authenticating identify of the person **(Fig 7 shows external computer system with Comparison 23)**
- Developing a response to said comparing **(Invalid registration signal is transmitted when the identification cannot be verified, Page 16, lines 12-22)**

In reference to claim 9, claim 8 is taught as above. Borza teaches that the information comprises the time of day **(Fig 5b, The watch indicates the time).**

In reference to claim 10, claim 9 is taught as above. Borza teaches that the portable device is wrist-worn **(An analogue watch 150, Page 11, line 23).**

In reference to claim 13, claim 8 is taught as above. Borza teaches that the baseline samples comprise obtaining a fingerprint image of the person **(Borza teaches of a sensing element 117, a sensing pad 119 for obtaining a fingerprint image of a person, Page 9 lines 22-23).**

In reference to claim 18, claim 8 is taught as above. Borza teaches that comparing being by the portable device **(Fig 9 teaches a method of where comparison is done on the watch).**

In reference to claim 19, claim 8 is taught as above. Borza teaches that comparing being by a computer system external to the portable device **(Comparison**

shown in a external computer system such as the receiving module of Fig 7, comparison done by comparator 23).

In reference to claim 20, claim 19 is taught as above. Borza teaches that the external computer system includes mass storage for storing additional biometric data **(Host system receiving module 20 described as being a computer system that stores references IDREF, computers are known to have mass storage, Page 8, lines 27-30. The phase 'matching a reference ID' indicates that more than one reference ID is stored on the host system).**

In reference to claim 21, claim 8 is taught as above. Claim 21 taught as claim 3 above.

In reference to claim 22, claim 21 is taught as above. Borza teaches that a comparison between sensed biometric data and stored biometric data be performed to ascertain identity **(Fig 8, step 37)**. It is inherent in the comparison of sensed vs. stored that a level of confidence be ascertained even if such levels form a crude set such as "they are" or "they are not" the person. Also inherent in the comparison is development of tolerance levels since all real-world collected data has some error introduced as part of the instruments performing the collection. The tolerance levels will affect the minimum threshold level and thus must be compared as such.

In reference to claim 23, claim 22 is taught as above. Borza teaches that the predetermined minimum threshold being for a particular transaction attempted by the person **(Borza teaches allowing some receivers to inhibit access to devices of certain security access levels such decision done by device type, Page 20, lines**

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4-6). It is clear that Borza recognizes that some devices will not be able to authenticate within a certain tolerance, which may not be acceptable for some secure transactions and thus, restrict that particular type of transaction resulting in an understood predetermined minimum threshold for identity authentication.

Thus, Borza teaches all the limitations of claims 1-5, 7-13, and 18-23.

Claim 30-32 are rejected under 35 U.S.C. 102(e) as being anticipated by Freedman et al. (heretofore Freedman).

In reference to claim 30, Freedman teaches of authenticating the identity of a person comprising:

- Obtaining baseline samples of biometric data from the person over a period of at least one day (**Col 3, lines 38-52 describes obtaining biometric samples from a person and when a positive comparison is made, baseline samples are collected. Such an operation is not time dependent or time limited thus inherently includes at least one day.**)
- Forming a baseline profile from the biometric data (**Col 3, lines 38-52**)
- Repeatedly obtaining additional biometric data from the person
- Comparing the additional data to the baseline profile for authenticating identity of the person
- Developing a response to said comparing

The last three steps of described method deal with authenticating a person of which biometric identity authenticating systems always perform.

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In reference to claim 31, claim 30 is taught as above. Freedman teaches of freezing the baseline profile after obtaining baseline samples (**Fig 2 indicates that three data sets are characterized then the process of obtaining baseline samples is terminated**).

In reference to claim 32, claim 30 is taught as above. Freedman teaches of updating the baseline sample by the additional biometric data when the additional biometric data successfully authenticates the identity of the person (**Col 3, lines 43-52 teaches of adding addition data to the baseline when comparison is indicative of a substantial match**).

Thus, Freedman teaches all the limitations of claims 30-32.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Borza in view of Bergholz et al. (heretofore Bergholz).

In reference to claim 11, claim 8 is taught as above. Borza does not teach that the baseline samples comprise obtaining an image of the person's face Borza teaches that biometric sensor means 53 can be any other suitable, portable device, Page 11, lines 18-22. Bergholz suggests the use of an opto-electronic imaging device 4 for characterizing a user's distinctive physical features. Portable cameras are known to be able to characterize a user's distinctive physical features.

In reference to claim 12, claim 11 is taught as above. Borza teaches that the baseline samples comprise obtaining an image of the person's iris. **(Borza teaches that a retinal scan can be used for baseline sample, Page 11, lines 18-22).**

It would have been obvious at the time of invention to combine the teachings of Borza with the suggestions of Bergholz because Borza teaches that other sensing devices would also be suitable in his device and Bergholz suggests the use an optical sensing device.

Thus, Borza and Bergholz teach all the limitations of claims 11 and 12.

Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Borza in view of Bergholz et al. (heretofore Bergholz) further in view of Carroll et al. (heretofore Carroll).

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In reference to claim 24, claim 21 is taught as above. Borza does not teach of sensing that the person is not wearing the device and developing a response when the person is not wearing the device. Borza does teach that authentication should be revoked after a predetermined amount of time passes thus requiring re-authentication **(Page 17, lines 14-17 describe employing a time-out to disable access to a device found or taken)**. Bergholz suggests the use of an authentication system that provides access to the electronic components of a car, which employs a seat switch to monitor uninterrupted usage by a biometrically authorized person and thus develop a response when a user is not using the device, such as disabling electronic controls **(Col 2, lines 23-30)**. Carroll suggests the use of a wearable device **(house arrest monitor)** that monitors biometric data such voice, fingerprints, breath analysis, heart rate, temperature, blood pressure **(Fig 9 lists collected biometric data, Col 10 lines 58-64)**.

Borza teaches of a need for continuously re-authorizing an individual to ensure proper authorization **(Page 17, lines 14-17)**. Bergholz suggests monitoring a continuous biometric variable **(weight)** in order to maintain confidence in the user's identity in order to provide access authorization. Carroll suggests that it would be convenient to wear a biometric sensing device.

It would have been obvious to one skilled in the art of access authorization to combine the teaching of Borza with the suggestions of Bergholz and Carroll in order to provide a mechanism for monitoring whether a device is not being worn or used in order maintain a greater confidence in the user's identity. In addition, Borza discloses a

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portable device that runs on batteries of which power consumption is an issue, and Bergholz suggests that continuous biometric monitoring can be used to save energy because the use of other power-intensive processors can be circumvented (**Col 2, lines 18-20**).

In reference to claim 25 and 26, claim 24 is taught as above. Carroll teaches of sensing body temperature, heartbeat, and breathing (**See Fig 9 and Col 10 lines 58-64**).

It is well known in the art that body temperatures and bio-noises, such as heartbeats, are measurable continuous biometric variables that are indicative of living beings. It would have been obvious to exchange the seat switch (6) of Bergholz with a body temperature sensor or a heartbeat/breathing monitor and still reliably detect the presence of a person in the seat thus not departing from the core of the access authorization process of Bergholz.

Thus, Borza, Bergholz, and Carroll teach all the limitations of claims 24-26.

Claims 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Borza. Borza does not teach of sensing environmental information. The applicant describes environmental information depending on factors such as temperature (ambient or body), background noise, geographic position, and time of day. It is well known in the art to rely upon secondary information sources in order to make access and authentication procedures as secure as possible.

It would have been obvious to one skilled in the art at the time of invention to include in the baseline profile any data that would be required to allow access to a secured transaction. Prior art suggests the use of transaction time, location, and number of prior transactions for determining access authorization.

Thus, Borza and prior art teach all the limitations of claims 27 and 28.

Claims 29, and 33-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Borza in view of Freedman.

In reference to claim 29, claim 8 is taught as above. Claim 29 is taught as claim 31 above.

In reference to claim 33, claim 30 is taught as above. Claim 33 is taught as claim 3 above.

In reference to claim 34, claim 30 is taught as above. Borza teaches that baseline samples are collected while the person goes about his or her normal activities **(Retinal Scan described on Page 11, lines 18-22 can occur when user is either obtaining the time from looking at the watch or performing something as simple as trying to obtain information on whether he/she is being authorized by the device which can be considered normal activities).**

In reference to claim 35, claim 30 is taught as above. Claim 35 is taught as claim 11 above.

In reference to claim 36, claim 35 is taught as above. Claim 36 is taught as claim 12 above.

In reference to claim 37, claim 30 is taught as above. Prior art suggests that the use of voice recognition can be used to reliably authenticate an individual. Freedman suggests that his method as applied to fingerprint identification is also useful in other biometric template selection processes as well (Col 5, lines 42-44).

It would have been obvious to one skilled in the art at the time of invention to combine the teachings of Borza with the suggestions of Freedman because Borza teaches the use of biometric identification device and Freedman suggests the use of a biometric template selection process for use with biometric identification devices and systems. In addition, Freedman suggests that selecting the templates that best represent the unique biometric identification of the individual reduces the computation and thus the time required to register a print (Col 5, lines 45-66) and since Borza discloses a portable device, as such he would be concerned with reducing computation in order to decrease power consumption and size.

Thus, Borza and Freedman teach all the limitations of claims 29, and 33-37.

Claims 6, and 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Borza in view of Borman et al. (Heretofore Borman).

In reference to claim 6, claim 5 is taught as above. Borza teaches that the external computer system performs processing on an image to determine if the user of the portable device is authorized. Borza does not teach of performing a super-resolution technique on the additional images. Borman suggests that the problem of reconstructing high-resolution imagery from data acquired as a set of low quality video

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camera sequences (CCD images) promises improved reconstruction (Page 42, 1st paragraph).

In reference to claim 14, claim 8 is taught as above. Borman suggests using super-resolution techniques to improve reconstruction. (Page 42, paragraph 4).

In reference to claim 15, claim 14 is taught as above. Borza teaches of transmitting the baseline samples (biometric data) from the portable device (watch) to an external computer system. Borman suggests that reconstructing a high-resolution image from a set of low quality video camera sequences promises improved reconstruction (Page 42, 1st paragraph).

It would have been obvious to one skilled in the art at the time of invention to combine the teachings of Borza with the suggestions of Borman because the inclusion of super-resolution techniques in the imaging of low quality picture sequences would have provided increased accuracy in identity determination. In addition, Borman suggests that restoration of sequences captured using low quality cameras is a likely application scenario (Page 42, paragraph 4, "Low quality video camera sequences").

In reference to claim 16, claim 15 is taught as above. Claim 16 taught similar to claim 7, where "comparing the additional data to the baseline samples" is read to be the same as "performing an image recognition technique on the additional images" whether or not the data is a super-resolution reconstruction.

In reference to claim 17, claim 15 is taught as above. It would have been an object of any modern computer to have the capability of obtaining an "upgrade" in order to preserve the viability and longevity of the equipment, even if the "upgrade" was not

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exclusively software but included the exchange of certain pieces of hardware, such as a mainboard or ROM.

Thus, Borza and Borman teach all the limitations of claims 6, and 14-17.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nicholas L Linnenkamp whose telephone number is (703) 305-8701. The examiner can normally be reached on 8:00-5:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Horabik can be reached on (703) 305-4704. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4750.

Nicholas L Linnenkamp
Examiner
Art Unit 2635

NLL

MICHAEL HORABIK
SUPERVISORY PATENT EXAMINER
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